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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,835	04/13/2001	Johan Van Brabant	64251-020	4292

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EXAMINER

JACKSON, MONIQUE R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 01/27/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/834,835	BRABANT ET AL.	
	Examiner	Art Unit	
	Monique R Jackson	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15-32 is/are pending in the application.
- 4a) Of the above claim(s) 22-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed 11/5/02 has been entered. Claims 13-14 have been canceled. Claims 1-12 and 15-32 are pending in the application. Claims 22-32 have been withdrawn as being directed to a non-elected invention.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3. Claims 1, 6, 7, 9, and 15-19 are objected to because of the following informalities: as recited in the prior office action, though alternative expressions are permissive in the claims, they should be drafted in proper alternative format, i.e. “**selected from A, B or C**”; or in proper Markush claim format, i.e. “selected from the **group consisting of A, B and C**”. A claim that recites “selected from the group consisting of A, B or C” as in the instant claims is improper. Appropriate correction is required.
4. Claim 9 is objected to because of the following informalities: Claim 9 recites the limitation “coated with one or more metallic layers, an alloy selected from the group consisting of brass, bronze, zinc, zinc alloy, tin or tin alloy” however as recited, it appears as if the coating can be of any metallic layer or an alloy recited as opposed to a metallic layer consisting of or comprising the alloys recited. Appropriate correction is required.
5. Claim 19 is objected to because of the following informalities: at line 16, the term “is” in the phrase “an acrylic or methacrylic acid group and is methyl or ethyl esters” should probably be “its”. Appropriate correction is required.

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Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 17 and 19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 17 recites the limitation “metal reinforcement element according to claim 1, wherein the functional group include thiol groups,...all of these functional groups either as terminal groups or carried along the polymer backbone or as part of side chains, further including epoxy groups carried along the polymer backbone.” However, it is noted that the original disclosure at the time of filing does not provide support for a polymer bearing functional groups covalently bound to the metal surface wherein the polymer includes **all** of the functional groups above **and** epoxy groups as instantly claimed. Further, it is noted that based on the description at Pages 8-9, the Examiner believes the claim should probably read these groups in the alternative form. Similarly, amended Claim 19 as recited states “wherein the general formula (I) are as follows” followed by a list of functional groups wherein the list is not recited in the alternative format and hence appears to be directed to a formula wherein all of these functional groups are present.

8. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recites the limitation “according to claim 12, wherein the non-cured

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rubber composition is selected from” however there is insufficient antecedent basis for this limitation in the claim and hence one having ordinary skill in the art would not be reasonably apprised of the scope of the claimed invention and could not interpret the metes and bounds of the claim so as to understand how to avoid infringement.

9. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation “according to claim 1...Y representing a group capable of forming covalent bonds to a group selected from polymer or prepolymer of the coating” however there is insufficient antecedent basis for the limitation “prepolymer of the coating” in the claim given that Claim 1 is directed to a polymer only and hence one having ordinary skill in the art would not be reasonably apprised of the scope of the claimed invention and could not interpret the metes and bounds of the claim so as to understand how to avoid infringement.

10. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 now recites “according to claim 18, wherein the general formula (I) are as follows...” followed by three lists of various chemical groups for X, Y and R that are not presented in alternative format. Hence, given that there is only one general formula (I) in Claim 18, it is unclear whether the Applicant is attempting to claim a general formula (I) comprising all of these functional groups, or multiple general formulas given the term “are as follows”, or a general formula wherein the functional groups can be alternatively selected from any of these groups. Hence, given that the claim is written in such a manner that the renders it unclear, one

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having ordinary skill in the art would not be reasonably apprised of the scope of the claimed invention and could not interpret the metes and bounds of the claim so as to understand how to avoid infringement.

Claim Rejections - 35 USC § 102

11. Claims 1-8, 11-12, 15, 18, 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Garnier et al (USPN 6,087,519) for the reasons recited in paragraph 19 of the prior office action and restated below wherein the Examiner takes the position that the adhesive substance as well as the vulcanizable polymer taught by Garnier, both of which are coated on the metallic reinforcing carrier, read upon the instant limitations regarding coating with a polymer or prepolymer and further noting that the limitations of Claim 15 are not positively recited given that it depends from Claim 12 which includes a number of polymer matrix materials and hence does not specifically limit the invention to those recited in Claim 15.

Garnier et al teach an adhesive substance for improved adhesion between a vulcanizable polymer and a metallic reinforcing carrier, such as a steel cord (*an elongated steel element as in instant claim 8*) wherein the adhesive substance has the structure according to Col. 2, lines 1-30, which reads on the structure of the adhesion promoter as instantly claimed, with a functional group X, such as a thiol group (*as in instant claim 17*), covalently bonded to the metal surface, and a functional group Y which can be covalently bonded to the rubber during vulcanization (*hence vulcanizable/crosslinkable with the rubber as in instant claims 4-5*) wherein the coated metal reinforcement element is produced by coating the adhesive substance dissolved in an organic solvent and drawing the metallic reinforcing carrier through the solution in a dipping process, coating with vulcanizable polymer and carrying out vulcanization wherein the adhesion

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promoter coating as be as little as a mono-molecular layer (Abstract; Col. 1, line 64-Col. 2, line 50; Col. 3, lines 54-66; Col. 3, line 66-Col. 4, line 10; Col. 6, lines 16-51.) With regards to Claims 1-3, the Examiner takes the position that the claim limitation “deposited from a solvent selected from the group consisting of an aqueous solvent, alcoholic solvent or organic solvent” is a process limitation that does not affect the resulting product given that the resulting coated product does not contain the aqueous, alcoholic or organic solvent and hence the product taught by Garnier et al is the same as the instantly claimed product. With regards to Claims 20-21, the Examiner takes the position that the vulcanizable polymer that is coated over the treated metal reads on the instant claims given that an additional layer of the same vulcanizable polymeric material results in a product that would be the same as a single layer of vulcanizable polymeric material coated to a thickness equal to that of the combined individual layers.

12. Claims 1-5, 8-10, 12 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 58-193134 (JP'134) for the reasons recited in paragraph 20 of the prior office action and restated below.

JP'134 teaches a method of firmly bonding a steel cord (*elongated steel element as in instant claim 8*) to rubber in a manner such that rubber tires using said cord material (*as reinforcement, Figure 2*) may be durable for a long period wherein the surface of the steel cord, which is preferably plated with brass, copper, zinc or Cu-Zn-Co ternary alloy (*as in instant claims 9-10*), is coated with a liquid rubber (*as in instant claim 12*) containing COOH or OH groups (Abstract; Figures.) The steel cord is transferred into a liquid rubber bath, heat treated and then buried in vulcanizable rubber and vulcanized wherein the liquid rubber is preferably a polyisoprene rubber (*inherently a vulcanizable rubber that is co-vulcanizable or crosslinkable*

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with the rubber of the tires as in instant claims 4-5; Abstract; Figures.) With respect to the type of solution, though JP'134 does not specifically state that the solution is aqueous, alcoholic or organic, the Examiner takes the position that these limitations are process limitations that do not materially affect the resulting product given that the resulting coated product does not contain the aqueous, alcoholic or organic medium and hence, the invention taught by JP'134 is the same as the instantly claimed invention. With regards to Claims 20-21, the Examiner takes the position that the vulcanizable polyisoprene that is coated over the treated metal reads on the instant claims given that an additional layer of the same vulcanizable polymeric material results in a product that would be the same as a single layer of vulcanizable polymeric material coated to a thickness equal to that of the combined individual layers.

Claim Rejections - 35 USC § 103

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garnier et al in view of the admitted prior art. The teachings of Garnier et al are discussed above. Garnier et al do not teach that the steel cord is coated with a metallic layer as instantly claimed, however, the admitted prior art at Page 1, lines 20-21 teach that metal reinforcements are generally coated with a brass layer to facilitate adhesion and hence one skilled in the art at the time of the invention would have been motivated to include a brass layer over the steel cord taught by Garnier et al to facilitate adhesion.

14. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garnier et al in view of Marzocchi (USPN 3,793,130) or Goliaszewski et al (USPN 5,518,770) or JP'134. The teachings of Garnier et al are discussed above. Garnier et al do not specifically teach that the steel cord or reinforcement comprises a metal alloy or zinc alloy coating, however, it is very

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well known and conventional in the art to treat the surface of a metal wire or cord or other metallic surface, particularly a steel surface, with a cladding metal such as copper, zinc, tin or alloys thereof, and particularly zinc or alloys thereof as in a galvanization process, including zinc-aluminum alloys, to pretreat the steel or improve the corrosion resistance of the steel, as evidenced by Marzocchi (Col. 7, lines 1-7) or Goliaszewski et al (Col. 1, lines 1-45; Col. 32-39) or JP'134 (Abstract), and hence one having ordinary skill in the art at the time of the invention would have been motivated to subject the steel cord taught by Garnier et al to a galvanization process or metal cladding process with a conventional metal alloy such as brass or zinc alloys including zinc-aluminum alloys to provide improved corrosion resistance to the steel element.

Response to Arguments

15. Applicant's arguments filed 11/5/02 have been fully considered but they are not persuasive. With respect to Garnier et al, the Applicant argues that Garnier et al do not teach a polymer or prepolymer coating, however as discussed in detail above, Garnier et al do teach a coating comprising a compound that reads on the term polymer or prepolymer as instantly claimed. Further, the Applicant argues that Garnier et al actually teach away from the instant invention however the Applicant provides no further explanation of how Garnier et al teach away from the invention. With respect to JP'134 the Applicant argues that the instant invention is different from the invention taught by JP'134 given that JP'134 uses a liquid rubber with a molecular weight between 10,000 and 30,000 and coats the steel element by immersing it in the liquid rubber bath. The Applicant argues that JP'134 is different given that the instant invention utilizes a product of molecular weights below 10,000 and utilizes a polymer deposited from solution which provides dense layers of equal thickness and especially thin layers of equal

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thickness. However, it is noted that Applicant's arguments are not commensurate in scope to the instantly claimed invention given that the instant invention does not provide limitations with respect to molecular weight or layer/thickness properties. Hence, in response to applicant's argument that the reference fails to show certain features of applicant's invention that are not recited in the rejected claim(s), it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



mrj
January 24, 2003



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700